

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A radio apparatus characterized in that: a plurality of virtual terminal apparatuses are assumed which are different from a terminal apparatus which is a targeted communication party; an antenna's directional pattern is formed such that signal strength in the direction of one of the plurality of virtual terminal apparatuses is relatively small; and a signal is transmitted to the terminal apparatus which is a targeted communication party such that the directional pattern is varied so as to prevent each of the plurality of virtual terminal apparatuses from continuously receiving a signal by changing said one of the plurality of virtual terminal apparatuses at predetermined intervals. ~~directional patterns of antennas are varied so as to transmit signals to a terminal apparatus which is a targeted communication party, in order to prevent a virtually intercepting terminal apparatus, which is an unintended communication party, from continuously receiving the signals.~~

2. (Currently Amended) A radio apparatus, including:
a computing unit which computes a received response vector of a terminal apparatus which is a targeted communication party, based on signals received from the targeted terminal apparatus;

an acquiring unit which acquires a virtual response vector of one of a plurality of virtual terminal apparatus different from the targeted terminal apparatus apparatuses assumed such that the directions in which the plurality of virtual terminal apparatuses exist are mutually different;

a generator which generates a transmission weight vector based on the received response vector computed by said computing unit and the virtual response vector acquired by said acquiring unit; and

a transmitter which transmits a predetermined signal to the targeted terminal apparatus based on the transmission weight vector generated by said generator,

wherein said acquiring unit acquires again, as appropriate, a virtual response ~~veeters~~ vector such that the direction in which the virtual terminal apparatus exists is changed, and the thus reacquired virtual response vector is again subject to the processings by said generator and said transmitter.

3. (Original) A radio apparatus according to Claim 2, wherein said acquiring unit reacquires, as appropriate, a virtual response vector whose value of correlation with the received response vector computed by said computing unit is less than or equal to a predetermined threshold value, and the thus reacquired virtual response vector is again subject to the processings by said generator and said transmitter.

4. (Original) A radio apparatus according to Claim 3, wherein said acquiring unit further includes:

a storage which stores a plurality of virtual response vectors whose values of mutual correlation therewith are less than or equal to a predetermined threshold value; and

a selector which selects a virtual response vector from the plurality of virtual response vectors stored in said storage.

5. (Original) A radio apparatus according to Claim 3, further including:

a measuring unit which measures the intensity of a signal received from the targeted terminal apparatus; and

an intensity determining unit which instructs said acquiring unit to switch to the virtual response vector whose value of correlation with the received response vector computed by said computing unit becomes less than or equal to a predetermined threshold value if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

6. (Currently Amended) A radio apparatus according to Claim 3, further including:
a measuring unit which measures the intensity of a signal received from the targeted terminal apparatus; and

an intensity determining unit which instructs said ~~acquiring unit~~ transmitter to increase the intensity of signals to be transmitted to the targeted terminal apparatus if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

7. (Original) A radio apparatus according to Claim 5, wherein said intensity determining unit estimates the signal strength value of the targeted terminal apparatus from a value of correlation between the received response vector and the virtual response vector.

8. (Currently Amended) A transmission method characterized in that a plurality of virtual terminal apparatuses are assumed which are different from a terminal apparatus which is a targeted communication party; an antenna's directional pattern is formed such that signal

strength in the direction of one of the plurality of virtual terminal apparatuses is relatively small;
and a signal is transmitted to the terminal apparatus which is a targeted communication party
such that the directional pattern is varied so as to prevent each of the plurality of virtual terminal
apparatuses from continuously receiving a signal by changing said one of the plurality of virtual
terminal apparatuses at predetermined intervals. ~~signals are transmitted to a terminal apparatus,~~
~~which is a targeted communication party, by varying a directional pattern of an antenna so that a~~
~~potentially or virtually intercepting terminal apparatus different from the targeted terminal~~
~~apparatus cannot receive continuously the signals.~~

9. (Currently Amended) A transmission method in which a plurality of virtual
terminal apparatuses are assumed which are different from a terminal apparatus which is a
targeted communication party; an antenna's directional pattern is formed such that signal
strength in the direction of one of the plurality of virtual terminal apparatuses is relatively small,
and which performs a control such that a value of the intensity of a signal received by a terminal
apparatus which is a targeted communication party is maintained, and such that relatively small
signal intensity occurs in different directions other than the direction in which the terminal
apparatus which is a targeted communication part exists, by changing said one of the plurality of
virtual terminal apparatuses at predetermined intervals. ~~performs a control such that a value of~~
~~the intensity of a signal received by a terminal apparatus, which is a targeted communication~~
~~party, is maintained at a predetermined value, and varied as appropriate is a direction in which a~~
~~value of signal strength for a terminal apparatus which is other than the targeted terminal~~
~~apparatus.~~

10. (Currently Amended) A transmission method in which a plurality of virtual terminal apparatuses are assumed which are different from a terminal apparatus which is a targeted communication party, which generates a transmission weight vector used in transmitting a predetermined signal to a terminal apparatus, which is a targeted communication party, from a received response vector of the targeted terminal apparatus and a virtual response vector of a ~~potentially or virtually intercepting terminal apparatus~~ one of the plurality of virtual terminal apparatuses, and which performs a control in such a manner that the virtual response vector is changed, as appropriate, to a virtual response vector having a different value from the virtual response vector so as to change the direction in which the virtual terminal apparatus exists.

11. (Currently Amended) A transmission method, including:

computing a received response vector of a terminal apparatus which is a targeted communication party, based on signals received from the targeted terminal apparatus;

acquiring a virtual response vector of one of a plurality of virtual terminal apparatus ~~which is not the targeted terminal apparatus~~ apparatuses different from the terminal apparatus which is a targeted communication party and assumed such that the directions in which the plurality of virtual terminal apparatuses exists are mutually different;

generating a transmission weight vector based on the received response vector computed in said computing and the virtual response vector acquired in said acquiring; and

transmitting a predetermined signal to the targeted terminal apparatus based on the transmission weight vector generated by said generating,

wherein said acquiring a virtual response vector is such that a virtual response vector is acquired again, as appropriate, so as to change the direction in which the virtual terminal

apparatus exists, and the thus reacquired virtual response vector is again subject to the processings by said generating a transmission weight vector and said transmitting a predetermined signal.

12. (Original) A transmission method according to Claim 11, wherein said acquiring a virtual response vector is such that a virtual response vector whose value of correlation with the received response vector computed by said computing is less than or equal to a predetermined threshold value is reacquired, as appropriate, and the thus reacquired virtual response vector is again subject to the processings by said generating a transmission weight vector and said transmitting a predetermined signal.

13. (Currently Amended) A transmission method according to Claim 12, wherein said acquiring a virtual response vector further includes:

referring to a table storing a plurality of virtual response vectors whose values of mutual correlation therewith are less than or equal to a predetermined threshold value and selecting a virtual response vector from the plurality of virtual response vectors.

~~storing a plurality of virtual response vectors whose values of mutual correlation therewith are less than or equal to a predetermined threshold value; and~~

~~selecting a virtual response vector from the plurality of virtual response vectors stored in said storing.~~

14. (Original) A transmission method according to Claim 12, further including:
measuring the intensity of a signal received from the targeted terminal apparatus; and

instructing said acquiring a virtual response vector to switch to a virtual response vector whose value of correlation with the received response vector computed by said computing becomes less than or equal to a predetermined threshold value if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

15. (Original) A transmission method according to Claim 12, further including:
measuring the intensity of a signal received from the targeted terminal apparatus; and
instructing said transmitting a predetermined signal to increase the intensity of signals to be transmitted to the targeted terminal apparatus if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

16. (Original) A transmission method according to Claim 14, wherein said instructing to switch to a virtual response vector is such that the signal strength value of the targeted terminal apparatus is estimated from a value of correlation between the received response vector and the virtual response vector.

17. (Original) A transmission method according to Claim 15, wherein said instructing to increase the intensity of signals is such that the signal strength value of the targeted

terminal apparatus is estimated from a value of correlation between the received response vector and the virtual response vector.

18. (Currently Amended) A program executable by a computer, the program including the functions of:

computing a received response vector of a terminal apparatus which is a targeted communication party, based on signals received from the targeted terminal apparatus;

acquiring a virtual response vector of one of a plurality of virtual terminal apparatuses different from the terminal apparatus which is a targeted communication party and assumed such that the directions in which the plurality of virtual terminal apparatuses exist are mutually different;

generating a transmission weight vector based on the received response vector computed in said computing and the virtual response vector acquired in said acquiring; and

transmitting a predetermined signal to the targeted terminal apparatus based on the transmission weight vector generated by said generating,

wherein said acquiring a virtual response vector is such that a virtual response vector is acquired again, as appropriate so as to change the direction in which the virtual terminal apparatus exists, and the thus reacquired virtual response vector is again subject to the processings by said generating a transmission weight vector and said transmitting a predetermined signal.

19. (Original) A program according to Claim 18, wherein said acquiring a virtual response vector is such that a virtual response vector whose value of correlation with the

received response vector computed by said computing is less than or equal to a predetermined threshold value is reacquired, as appropriate, and the thus reacquired virtual response vector is again subject to the processings by said generating a transmission weight vector and said transmitting a predetermined signal.

20. (Currently Amended) A program according to Claim 19, wherein said acquiring a virtual response vector further includes:

referring to a table storing a plurality of virtual response vectors whose values of mutual correlation therewith are less than or equal to a predetermined threshold value and selecting a virtual response vector from the plurality of virtual response vectors.

~~storing a plurality of virtual response vectors whose values of mutual correlation therewith are less than or equal to a predetermined threshold value; and~~

~~selecting a virtual response vector from the plurality of virtual response vectors stored in said storing.~~

21. (Original) A program according to Claim 19, further including: measuring the intensity of a signal received from the targeted terminal apparatus; and

instructing said acquiring a virtual response vector to switch to a virtual response vector whose value of correlation with the received response vector computed by said computing becomes less than or equal to a predetermined threshold value if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

22. (Original) A program according to Claim 19, further including: measuring the intensity of a signal received from the targeted terminal apparatus; and

instructing said transmitting a predetermined signal to increase the intensity of signals to be transmitted to the targeted terminal apparatus if a signal strength value of the targeted terminal apparatus, which is calculated from the transmission weight vector, the received response vector and information on the intensity of the received signal measured by said measuring unit, is less than or equal to a threshold value.

23. (Currently Amended) A ~~transmission method~~ program according to Claim ~~19~~ 21, wherein said instructing to switch to a virtual response vector is such that the signal strength value of the targeted terminal apparatus is estimated from a value of correlation between the received response vector and the virtual response vector.

24. (Original) A program according to Claim 22, wherein said instructing to increase the intensity of signals is such that the signal strength value of the targeted terminal apparatus is estimated from a value of correlation between the received response vector and the virtual response vector.